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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,289	01/27/2004	Peter Dragic	LCU-031000	9337

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EXAMINER

PENG, CHARLIE YU

ART UNIT PAPER NUMBER

2883

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/766,289

Applicant(s)

DRAGIC, PETER

Examiner

Charlie Peng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/766,289.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04/23/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION*****Claim Rejections - 35 USC § 112***

Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite and/or incorrect in claiming the subject matter which applicant regards as the invention. The applicant stated, in lines 6-7 of both claims, "an optical mode has an index of refraction". To the examiner's knowledge, it is generally accepted and known in the art that "index of refraction" is a physical property of optical materials such as core, cladding, etc., while an optical mode generally refers to an electromagnetic wave traveling in a fiber or waveguide. Therefore, an optical mode cannot possess an index of refraction.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Paten 4,913,521 to Tajima et al. Tajima teaches an optical fiber having a core **1** composed of SiO<sub>2</sub> doped with Al<sub>2</sub>O<sub>3</sub>, a first cladding **4** composed of SiO<sub>2</sub> doped with F, and a second cladding **5** composed with SiO<sub>2</sub>, wherein the second cladding **5** has a refractive index ( $n_{2x}$ ) smaller than that ( $n_{cx}$ ) of the core **1**. (See at least Fig. 3 and its description, and column 13, final paragraph.) Tajima further teaches that the second cladding **5** having an acoustic wave velocity (shear velocity) larger than that of

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the first cladding 4 but smaller than that of the core 1. (See at least Fig. 16C and its description.) Although Tajima does not teach a buffer coating outside the optical fiber, such a buffer layer is well known in the art to be applied as the outer-most layer of an optical fiber. (See form PTO-892 for relevant references by Simons and Berkey) It would have been obvious to one having ordinary skill in the art at the time the invention was made to place a buffer layer outside the optical fiber. The motivation would be to for protective purposes of the optical fiber or as a buffer between the optical fiber and a jacket.

With specific reference to claim 4, Tajima teaches the optical fiber having a core, two claddings, index of refraction and shear velocity, and the dopants for the core and the claddings. (Column 13, last paragraph) Tajima does not teach the second cladding to be doped with a higher concentration of fluorine than the first cladding. Adjusting dopants concentration of in core and/or cladding is well known in the art and commonly practiced in research and industry settings. It would have been for one having ordinary skills in the art at the time the invention is made to modify the dopant concentration to create a desired optical fiber for the application, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. The motivation would be to create a cladding having a corresponding index of refraction as needed for individual applications.

With specific reference to claims 2 and 5, Tajima teaches that the optical fiber is drawn from a preform and has a uniform outer diameter of 125  $\mu\text{m}$ , and Tajima does not

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teach the optical fiber to be stretched or tapered in any regions longitudinally, therefore it is at least substantially uniform over its entire length.

***Allowable Subject Matter***

Claims 3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Tajima et al. teach the optical fiber having a core, two claddings, their associated properties of index of refraction and shear velocity except for a third cladding and the dopants. Although at least a third cladding of an optical fiber is known, prior art does not relate the third cladding with concepts of the instant application, particularly prior art does not relate to the shear (acoustic) velocity. It is the examiner's opinion that the prior art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see form PTO-892 for additional references cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 9 am - 6 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charlie Peng  
Charlie.Peng@uspto.gov  
07/22/2005

A handwritten signature in black ink, appearing to read "Brian Healy", with a stylized flourish at the end.

**Brian Healy**  
**Primary Examiner**